

REMARKS

I. Status of Claims

Claims 1-8 are pending. By this amendment, Applicants have cancelled claims 3 and 4 and amended claim 1. Support for the amendment to claim 1 can be found, for example, in the originally-filed specification and claims, such as claims 3 and 4. No new matter is added by this amendment.

II. Rejections under 35 U.S.C. § 103

A. Abe in view of Conger

The Examiner indicated in the Advisory Action that, as amended, claims 1 and 5-8 would be rejected under 35 U.S.C. § 103 as allegedly obvious over U.S. Patent No. 6,187,201 to Abe et al. ("Abe") in view of U.S. Patent No. 4,141,825 to Conger ("Conger"). Advisory Action at 2. Applicants disagree.

In order to establish a *prima facie* case of obviousness, the Examiner must demonstrate, among other things, that the prior art references teach or suggest all of the claim limitations. M.P.E.P. § 2143. This the Examiner has not done.

Abe does not teach or suggest a divalent cation yield of at least about 65%. Rather, Abe is specifically directed towards ultra-pure water, and thus extols the virtues of the invention's ability to *eliminate*, rather than maintain, divalent cations. "The present invention . . . aims at providing a system for producing ultra-pure water which will allow thorough elimination of not only electrolytes, crude particles, and organic substances from the crude water submitted, but also . . . divalent and polyvalent cations" Abe, col. 2, ll. 9-15.

Likewise, Conger does not teach or suggest a process wherein the yield of divalent cations is at least about 65%. Nor does Conger teach or suggest the successive steps of the process as claimed herein. Claim 1 recites that the retentate of the standard pressure reverse osmosis is subjected to electrodialysis. Conger, on the other hand, either first subjects the water to electrodialysis, or only subjects the permeate (and not the retentate) of the reverse osmosis to electrodialysis. See Figure 1A. In view of the fact that these elements are not taught or suggested in either Abe or Conger, Applicants respectfully request reconsideration of the claims, as amended herein.

B. Ohya in view of Conger

The Examiner further indicated in the March 11, 2004, Advisory Action that claims 1, 2, and 5-8 would be rejected under 35 U.S.C. § 103 as allegedly obvious over XP 001023196 by Ohya et al. ("Ohya") in view of Conger.

Again, the Examiner has not established, as she must, that Ohya and Conger teach or suggest all of the claim elements. Ohya teaches an 80% recovery of water, rather than the about 100% yield of the instant claims. See Ohya at Figure 1. Furthermore, as indicated in Figure 2, this 80% recovery of water is only achieved at a high osmotic pressure (17 MPa); at osmotic pressures below 10 MPa, however, 70% of water or less is shown to be recovered.

Ohya likewise only concerns recovering water from salt water, which of course has a very high concentration of salt. Thus the concentrations of mono- and multivalent ions involved are well outside the range of the "about 3g/L of total ions or less" claimed herein. For example, Figure 1 shows the sea water put into the system contains 32.8

g/L of mono- and multivalent ions (3.28 wt% of 1 kg of salt water). Even after the salt water passes through the multi-ion adsorption phase, the water retains 33.48 g/L of mono- and multivalent ions (3.10 wt% of 1.08 kg). Therefore, Ohya does not teach or suggest a process for depleting monovalent cations from water which comprises about 3 g/L of total ions or less, as claimed herein.

Moreover, Ohya nowhere teaches or suggests obtaining a divalent cation yield of at least about 65%. Rather, the aim of Ohya is to remove and/or separate from sea water “the main constituents of scale, alkaline earth metals mentioned above [i.e., calcium and magnesium].” *Id.* at Abstract. Figure 1 of Ohya demonstrates this, showing that the water containing a high yield of divalent cations is recycled back through the system, while the water that is free of divalent cations (0.00 wt% multivalent ions) is released as the product water. Thus Ohya, similar to Abe discussed above, specifically teaches *removing* divalent cations from the water.

As discussed above, Conger also does not teach or suggest obtaining a yield of at least about 65% divalent cations or the successive steps claimed herein. Therefore, no *prima facie* case of obviousness has been established, and Applicants respectfully request reconsideration and allowance of the claims, as amended.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims 1, 2, and 5-8.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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